

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A reflective cholesteric liquid crystal (CLC) display device, comprising:

a first substrate;

an absorption layer on the first substrate;

a cholesteric liquid crystal color filter on the absorption layer, the cholesteric liquid crystal color filter having a plurality of protrusions, a shape, a size and a distribution of the protrusions being controlled to make a distribution of reflected light be uniform within a viewing angle range of about 30 degrees upward and downward from a front direction;

an overcoat layer on the cholesteric liquid crystal (CLC) color filter;

a first electrode on the overcoat layer;

a second substrate;

a second electrode beneath the second substrate;

a retardation layer on the second substrate;

a polarizer on the retardation layer; and

a liquid crystal layer between the first electrode and the second electrode;

~~wherein a refractive index of the overcoat layer is adjusted to make incident light be perpendicular to a surface of the cholesteric liquid crystal filter.~~

2. (Canceled)

3. (Original) The device according to claim 1, wherein a shape, a size and a distribution of the protrusions are controlled to make a distribution of reflected light be decreased gradually within about 20% of the luminance of a front direction.

4. (Original) The device according to claim 1, wherein the reflective cholesteric liquid crystal display device further includes a thin film transistor, which switches a signal to the second electrode, on the second substrate.

5. (Original) The device according to claim 1, wherein the reflective cholesteric liquid crystal (CLC) display device further includes a thin film transistor, which switches a signal to the first electrode, on the first substrate.

6. (Currently Amended) A manufacturing method of a lower substrate for a reflective cholesteric liquid crystal (CLC) display device, comprising:

forming an absorption layer on an insulating substrate;

forming a cholesteric liquid crystal color filter over the absorption layer, the cholesteric liquid crystal color filter having a plurality of protrusions, a shape, a size and a distribution of the protrusions being controlled to make a distribution of reflected light be uniform within a viewing angle range of about 30 degrees upward and downward from a front direction;

forming an overcoat layer on the cholesteric liquid crystal color filter; and

forming a transparent electrode on the overcoat layer;

~~wherein a refractive index of the overcoat layer is adjusted to make incident light be perpendicular to a surface of the cholesteric liquid crystal filter.~~

7. (Previously Presented) The method according to claim 6, wherein the plurality of protrusions of the cholesteric liquid crystal color filter is formed through exposing and developing a photoresist film.

8. (Original) The device according to claim 1, wherein the protrusions have a rounded surface.

9. (Canceled)

10. (Currently Amended) A method of forming a reflective liquid crystal display device having a cholesteric liquid crystal color filter, comprising:

forming an absorption layer on a first substrate;

forming a first alignment layer on the absorption layer;

coating a cholesteric liquid crystal on the alignment layer;

forming a photoresist layer on the cholesteric liquid crystal layer;

providing a mask having a plurality of transmissive portions and a plurality of blocking portions over the photoresist;

exposing the photoresist to light;

removing selected portions of the photoresist;

patterning the cholesteric liquid crystal layer using the photoresist as a mask to form a plurality of protrusions on the cholesteric liquid crystal layer, a shape, a size and a distribution of the protrusions being controlled to make a distribution of reflected light be uniform within a viewing angle range of about 30 degrees upward and downward from a front direction;

providing an overcoat layer over the protrusions and the cholesteric liquid crystal layer to form a substantially even surface;

providing a second substrate opposite the first substrate; and

interposing a liquid crystal between the first and second substrates;

~~wherein a refractive index of the overcoat layer is adjusted to make incident light be perpendicular to a surface of the cholesteric liquid crystal filter.~~

11. (Original) The method of claim 10, wherein the photoresist is a negative photoresist.

12. (Original) The method of claim 10, wherein the photoresist is a positive photoresist.

13. (Original) The method of claim 10, further comprising forming a first electrode on the overcoat layer.

14. (Original) The method of claim 10, further comprising forming a second alignment layer on the second substrate.